

REMARKS/ARGUMENTS

Various claims are being amended as shown above. The claim amendments clarify the claim language and are not intended to limit the scope of the claims, unless the claim language is expressly quoted in the following remarks to distinguish over the cited art.

In the office action, the Examiner listed claims 1-28 as pending in the application. However, the undersigned representative of the Applicant respectfully notes that pending claims 29-37 were added in the Amendment filed on April 8, 2005. Accordingly, the undersigned representative respectfully requests the Examiner to also examine the pending claims 29-37.

In section 3 the office action, claims 1-6, 10-15, and 20-25 were rejected under 35 U.S.C. 103(a) as allegedly being anticipated by Ogus (U.S. Patent No. 6,587,875) in view of Baumgartner, et al. (U.S. Patent No. 6,334,177). Applicant respectfully traverses the rejection.

Ogus is directed to a protocol that a first computer to send messages to a second computer, while increasing the send rate of the messages until link saturation is detected in the Ethernet network 32 (Figure 3) that connects the two computers. As shown in Figures 2-3, messages are sent via Ethernet network. As shown in Figure 6, messages are sent via Internet network. As shown in Figure 9, messages are sent via a peer-to-peer communication network. Therefore, the messages are not sent via shared memory links.

The Examiner correctly admits in the office action that Ogus does not specifically disclose shared memory links for transmitting memory requests and memory responses between the processor cells and wherein the link connects a high bandwidth integrated circuit of the one processor cell with another high bandwidth integrated circuit of another processor cell. In an attempt to overcome the deficiency of Ogus, the Examiner relies on Baumgartner in an attempt to show various features.

Baumgartner is directed to a NUMA multiprocessor system 10 including four nodes 11a-11d that are interconnected by a Scalable Coherent Interconnect (SCI) interconnection network 16. The interconnection network 16 is used to access one of the local memories 13a-13d by the processors in the system 10.

The Ogus-Baumgartner combination does not the step of recognizing when a network operation can use a link among a plurality of links wherein the links comprises shared memory links. The Ogus-Baumgartner combination also does not disclose the step of avoiding the use of a network connection in the network when utilizing the link, where the shared memory links provide higher bandwidth than the network connection. Ogus always requires the network connection 32 to be automatically used, and does not disclose and does not suggest any shared memory links, and also does not disclose and does not suggest the step of recognizing if a network operation can use any shared link. Baumgartner always requires that the interconnection network 16 to be automatically used, and also does not disclose and does not suggest the step of recognizing if a

network operation can use any shared link. Also, the Ogus-Baumgartner combination does not disclose and does not suggest the step of utilizing said link of said plurality of links to perform said network operation, wherein utilizing said link further comprises avoiding the use of a network connection in the network, wherein said shared memory links provide higher bandwidth than the network connection.

Independent claim 1 is being amended to include the features recited in 29 and 30. Independent claim 1 distinguishes over the Ogus-Baumgartner combination least by reciting, a method including "recognizing by software operating on at least one processor cell when a network operation can use a link of said plurality of links to implement a network operation, wherein said plurality of links comprises shared memory links for transmitting memory requests and memory responses between the processor cells, and wherein the link connects a high bandwidth integrated circuit of the one processor cell with another high bandwidth integrated circuit of another processor cell; and utilizing said link of said plurality of links to perform said network operation, wherein utilizing said link further comprises avoiding the use of a network connection in the network, wherein said shared memory links provide higher bandwidth than the network connection," and such recited features are not disclosed or suggested by the Ogus-Baumgartner combination.

Accordingly, claim 1 is patentable over the Ogus-Baumgartner combination.

Claims 10 and 19 are patentable over the Ogus-Baumgartner combination for the similar reasons discussed above.

Claims 2-6, 12-15, and 21-25 depend from various ones of claims 1, 10, and 19, and are each patentable over the Ogus-Baumgartner combination for at least the same reasons that respective base claim is patentable over the Ogus-Baumgartner combination. Each of the claims 2-6, 12-15, and 21-25 further distinguishes over the Ogus-Baumgartner combination by reciting additional features. Accordingly, claims 2, 7-9, 11, 16-18, 20 and 26-28 are each patentable over the combination of Ogus and Baumgartner.

Furthermore, it would not have been obvious to combine Ogus and Baumgartner as suggested in the office action because the combination would require a substantial reconstruction and redesign of the elements disclosed in the primary reference. (See MPEP 2143.01). For example, there is no suggestion in the references on how to modify the elements in the references so that the network of Ogus can work with the elements disclosed in Baumgartner. Furthermore, the references do not suggest nor disclose any interface circuitry, modules, systems, methods, and/or techniques that permit the network of Ogus to work with the elements disclosed in Baumgartner. Therefore, the combination of Ogus and Baumgartner is improper.

For the above reasons, Applicants request reconsideration and withdrawal of this rejection under 35 U.S.C. §103.

In section 18 of the office action, claims 7-9, 16-19 and 26-28 were rejected under 35 U.S.C. 103(a) as being

unpatentable over Ogus (U.S. Patent No. 6,587,875), Baumgartner, et al. (U.S. Patent No. 6,334,177) , further in view of Dally, et al. (U.S. Patent No. 6,370,145). Applicant respectfully traverses the rejection.

The Examiner correctly admits in the office action that Ogus and Baumgartner do not specifically disclose choosing a second link from said plurality of links when a first link of said plurality of links does not provide sufficient bandwidth to perform said network operation, and do not specifically disclose suspending said network operation when said link of said plurality of links is not providing sufficient bandwidth to perform said network operation and resuming said network operation when said link of said plurality of links provides sufficient bandwidth to perform said network operation. In an attempt to overcome the deficiency of Ogus and Baumgartner, the Examiner relies on Dally in an attempt to show various features.

However, Dally instead discloses the step of choosing a backup link among SONET Internet links 46,56 (Figure 7). Dally does not disclose and does not suggest choosing a second link from said plurality of links where the links are shared memory links, as recited in claim 7 and its base claim and as recited in other claims.

Furthermore, claims 7-9, 11, 16-18, 20 and 26-28 depend from various ones of claims 1, 10 and 19 and are each patentable over the combination of Ogus, Baumgartner, and Dally for at least the same reasons that their respective base claim is patentable over the cited references, considered singly or in combination.

Furthermore, each of the claims 2, 7-9, 11, 16-18, 20 and 26-28 distinguishes over the combination of Ogus, Baumgartner, and Dally by reciting additional features.

Furthermore, it would not have been obvious to combine Ogus, Baumgartner, and Dally as suggested in the office action because the combination would require a substantial reconstruction and redesign of the elements disclosed in the primary reference. (See MPEP 2143.01). For example, there is no suggestion in the references on how to modify the elements in the references so that the network of Ogus can work with the elements disclosed in Baumgartner and in Dally. Furthermore, the references do not suggest nor disclose any interface circuitry, modules, systems, methods, and/or techniques that permit the network of Ogus to work with the elements disclosed in Baumgartner and in Dally. Therefore, the combination of Ogus, Baumgartner and Dally is improper.

Furthermore, it would not have been obvious to combine Ogus and Dally as suggested in the office action because Ogus teaches away from the features recited in the claims. Specifically, Ogus already provides a data rate adjustment mechanism that is responsive to link saturation. Therefore, Ogus teaches away from the necessity of using shared memory links to perform the network operations.

Accordingly, claims 7-9, 11, 16-18, 20 and 26-28 are each patentable over the combination of Ogus, Baumgartner and Dally.

For the above reasons, Applicant requests reconsideration and withdrawal of this rejection under 35 U.S.C. §103.

For the above reasons, Applicants respectfully request allowance of all pending claims.

If the undersigned attorney has overlooked a teaching in any of the cited references that is relevant to the allowability of the claims, the Examiner is respectfully requested to specifically point out where such teachings may be found.

CONTACT INFORMATION

If the Examiner has any questions or needs any additional information, the Examiner is invited to telephone the undersigned attorney at (805) 681-5078.

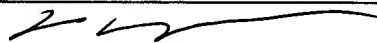
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